LISTING OF CLAIMS:

The following listing of claims replaces all previous listings of claims. Please cancel claims 1, 5-8, 16-19, 26, and 30-33 without prejudice or disclaimer.

1. (Canceled)

2. (Currently amended) The frame scheduler of claim ~~1~~ 3, wherein the header field defines a payload type indicative of a coding rate for the payload.

3. (Currently amended) A downlink beam frame scheduler comprising ~~The frame scheduler of claim 1,~~:

a memory; and

a schedule table stored in the memory, the schedule table comprising:

a scheduling segment comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers to data in memory to be transmitted in the payload,

wherein the scheduling entry comprises a first payload scheduling entry for the payload in the frame, and wherein the scheduling table further comprises a second payload scheduling entry for a second payload in the frame.

4. (Currently amended) A downlink beam frame scheduler comprising ~~The frame scheduler of claim 1,~~:

a memory; and

a schedule table stored in the memory, the schedule table comprising:

a scheduling segment comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers to data in memory to be transmitted in the payload,

wherein the header field defines a first payload type field for a first payload in the frame and a second payload type field for a second payload in the frame.

5. – 8. (Canceled)

9. (Currently amended) A downlink beam frame scheduler comprising ~~The frame scheduler of claim 8,~~:

a memory; and

a schedule table stored in the memory, the schedule table comprising:

a scheduling segment comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a

payload and a frame to be transmitted, and payload data pointers to data in memory to be transmitted in the payload,

wherein:

the payload data pointers comprise queue pointers;

the queue pointers are indicative of downlink beam hop location;

the queue pointers are further indicative of priority;

the queue pointers are further indicative of code rate; and

the code rate is one of a light and heavy code rate.

10. (Currently amended) The frame scheduler of claim ~~1~~ 3, wherein the memory comprises a plurality of scheduling segments for directing preparation of downlink frames.

11. (Currently amended) A downlink beam frame scheduler comprising ~~The frame scheduler of claim 1,~~:

a memory; and

a schedule table stored in the memory, the schedule table comprising:

a scheduling segment comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers to data in memory to be transmitted in the payload,

wherein the payload header further defines a frame offset pointing to a subsequent payload header.

12. (Currently amended) A downlink beam frame scheduler comprising ~~The frame scheduler of claim 1,~~:

a memory; and

a schedule table stored in the memory, the schedule table comprising:

a scheduling segment comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers to data in memory to be transmitted in the payload,

wherein the header field defines a power gated payload type.

13. (Currently amended) A downlink beam frame scheduler comprising ~~The frame scheduler of claim 1,~~:

a memory; and

a schedule table stored in the memory, the schedule table comprising:

a scheduling segment comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers to data in memory to be transmitted in the payload,

wherein the header field defines a power gated frame type.

14. (Currently amended) The frame scheduler of claim ~~1~~ 3, wherein the scheduling segment comprises a plurality of scheduling entries, each scheduling entry directing preparation of a subsequent downlink frame.

15. (Currently amended) The frame scheduler of claim ~~1~~ 3, wherein the data are ATM cells.

16. – 19. (Canceled)

20. (Currently amended) A ~~The~~ downlink frame processing system ~~of claim 16~~ for a satellite, the frame processing system comprising:

a packet switch routing self addressed uplink data from an input port to an output port;

a memory coupled to the output port, the memory comprising storage for at least two downlink beam hop locations; and

a downlink scheduler coupled to the memory, the downlink scheduler including a downlink schedule comprising at least one scheduling entry, the scheduling entry comprising a header field defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers into the memory.

wherein the header field defines a first payload type field for a first payload in the frame and a second payload type field for a second payload in the frame.

21. (Currently amended) The frame processing system of claim ~~16~~ 20, wherein the payload data pointers comprise queue pointers.

22. (Original) The frame processing system of claim 20, wherein the queue pointers are indicative of downlink beam hop location.

23. (Original) The frame scheduler of claim 22, wherein the queue pointers are further indicative of priority.

24. (Original) The frame scheduler of claim 23, wherein the queue pointers are further indicative of code rate.

25. (Original) The frame scheduler of claim 24, wherein the code rate is one of a light and heavy code rate.

26. (Canceled)

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27. (Currently amended) The method of claim ~~26~~ 35, wherein the allocating ~~comprises~~ includes allocating a first downlink beam hop location queue and a second downlink beam hop location queue.

28. (Currently amended) The method of claim ~~27~~ 35, wherein the processing ~~comprises~~ includes processing an active one of a plurality of scheduling segments storing the downlink schedule.

29. (Currently amended) The method of claim 28, further comprising deallocating the active one of the plurality of scheduling segments and activating a different one of the ~~scheduling segment in~~ the plurality of scheduling segments.

30– 33. (Canceled)

34. (Currently amended) The method of claim ~~30~~ 35, further comprising the step of servicing a different queue when a scheduled queue indicated by a queue pointer is empty.

35. (Currently amended) A method for preparing downlink frames for transmission in a satellite downlink, ~~The method of claim 33, further comprising the step of~~ the method comprising:

switching self addressed uplink data from a switch input port to a switch output port;

allocating, in a memory, storage for at least two downlink beam hop locations;

forming downlink frames by processing a downlink schedule comprising at least one scheduling entry, a header field in the scheduling entry defining at least one of a payload and a frame type for at least one of a payload and a frame to be transmitted, and payload data pointers into the memory; and

servicing a light coding queue when a heavy coding queue indicated by a queue pointer is empty,

wherein:

the processing the payload data pointers comprises processing queue pointers;

the processing the queue pointers comprises processing queue pointers indicative of downlink beam hop location;

the processing the queue pointers comprises processing queue pointers indicative of priority; and

the processing queue pointers comprises processing queue pointers indicative of code rate.